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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,644	10/20/2003	Ryoko Miyachi	60188-676	1793

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EXAMINER	
KIM, DANIEL Y	

ART UNIT	PAPER NUMBER
2185	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/687,644	MIYACHI ET AL.	
	Examiner	Art Unit	
	Daniel Kim	2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5, 7, 10, and 15-17, 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, lines 1-2 discloses "searching for data sets referred to simultaneously with the data sets that are high in the priority established in the step (c)". This language does not allow one of ordinary skill in the art to determine the scope of the claimed invention. For purposes of this action, this limitation will be interpreted as processing data sets according to their priority, one after another.

Further, in line 5, the word "preferentially" is relative and renders the limitation indefinite. For the purposes of this action, this word will be ignored in the limitation.

Claim 7, line 2 discloses the word "preferentially". This word is relative and renders the limitation indefinite. For the purposes of this action, this word will be ignored in the limitation.

Claim 10, line 2 discloses the word "preferentially". This word is relative and renders the limitation indefinite. For the purposes of this action, this word will be ignored in the limitation.

Claim 15, line 3 discloses the word "preferentially". This word is relative and renders the limitation indefinite. For the purposes of this action, this word will be ignored in the limitation.

Claim 16, lines 1-2 disclose "data sets to be assigned to different banks are specifiable". This language does not allow one of ordinary skill in the art to determine the scope of the claimed invention. For purposes of this action, this limitation will be interpreted as the data sets are assigned to different banks.

Claim 17, line 2 discloses the word "preferentially". This word is relative and renders the limitation indefinite. For the purposes of this action, this word will be ignored in the limitation.

Claim 19, lines 1-2 disclose "a bank to which a data set is assigned is specifiable". This language does not allow one of ordinary skill in the art to determine the scope of the claimed invention. For purposes of this action, this limitation will be interpreted as a data set is assigned to a bank.

Claim 20, line 1 discloses the word "preferentially". This word is relative and renders the limitation indefinite. For the purposes of this action, this word will be ignored in the limitation.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 6-7, 9-11, 16-17 and 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kolchinsky (US Patent No. 5,301,344).

For claim 1, Kolchinsky discloses an information processing method comprising the steps of:

(a) obtaining, among arithmetic instructions, information on data sets referred to by memory reference (arithmetic unit which is also implemented by a programmable logic block such as a programmable gate array, is configured according to a file selected from hardware configuration files. Each of the configuration files are loaded initially with a plurality of files such as from hard disk. Subsequently, when an operational code identifying a particular process arrives at the instruction operational code register, decoder is enabled to order one or both of the hardware configuration files to introduce the desired file in the respective units, address generator and arithmetic unit, col. 3, lines 33-45), and

(b) assigning to different banks a plurality of data sets simultaneously referred to by memory reference performed in accordance with an arithmetic instruction (each of these combinations of address set, data set and arithmetic circuits are interconnected by one of the plurality of buses shown, so that simultaneous pipeline-like processing can be accomplished, col. 3, lines 59-63).

Claim 6 is rejected using the same rationale as for the rejection of claim 1 above.

For claim 7, assuming that, as stated above, the word "preferentially" is ignored, then claim 7 is rejected using the same rationale as for the rejection of claim 6 above.

Claim 9 is rejected using the same rationale as for the rejection of claim 6 above.

For claim 10, assuming that, as stated above, the word "preferentially" is ignored, then claim 10 is rejected using the same rationale as for the rejection of claim 9 above.

Claim 11 is rejected using the same rationale as for the rejection of claim 1 above.

For claim 16, assuming that, as stated above, data sets are assigned to different banks, claim 16 is rejected using the same rationale as for the rejection of claim 9 above.

For claim 17, assuming that, as stated above, the word "preferentially" is ignored, then claim 17 is rejected using the same rationale as for the rejection of claim 10 above.

For claim 19, assuming that, as stated above, data sets are assigned to different banks, claim 19 is rejected using the same rationale as for the rejection of claim 17 above.

For claim 20, assuming that, as stated above, the word "preferentially" is ignored, then claim 20 is rejected using the same rationale as for the rejection of claim 17 above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2, 5, 8, 12, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolchinsky (US Patent No. 5,301,344) and Lewchuk et al (US Patent No. 6,058,461).

For claim 2, Kolchinsky discloses the invention as per the rejection of claim 1 above. Kolchinsky does not, however, expressly disclose establishing bank assignment priority or that the assignment to the banks is performed in sequence beginning with data sets that are high in priority.

Lewchuk, however, discloses a higher priority memory operation, as indicated via the priority assigned to the memory operation by the master for the memory operation, may be selected over a prior, lower priority memory operation if the lower priority memory operation is to a different address than the higher priority memory operation (col. 9, lines 2-8),

wherein the assignment to the banks is performed in sequence beginning with data sets that are high in priority (col. 9, lines 2-8).

Lewchuk and Kolchinsky are analogous art in that they are of the same field of endeavor, that is, a system and method for memory processing according to arithmetic instructions. It would have been obvious to a person of ordinary skill in the art at the time of the invention to include prioritizing of memory for memory operation because the concept of applying priority levels to various memory operations and interrupting data transfers of lower priority memory operations to higher priority memory operations may

increase the performance of a computer system (col. 2, lines 60-67 and col. 3, lines 1-12) as taught by Lewchuk.

For claim 5, assuming that, as stated above, processing of data sets is done according to their priority, one after another, claim 5 is rejected using the same rationale as for the rejection of claim 2 above.

Claim 8 is rejected using the same rationale as for the rejection of claim 2 above.

Claim 12 is rejected using the same rationale as for the rejection of claim 2 above.

For claim 15, assuming that, as stated above, processing of data sets is done according to their priority, one after another, claim 15 is rejected using the same rationale as for the rejection of claim 5 above.

For claim 18, assuming that, as stated above, the said data sets are dealt with according to their priorities, from highest to lowest, claim 18 is rejected using the same rationale as for the rejection of claim 12 above.

7. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolchinsky (US Patent No. 5,301,344), Lewchuk (US Patent No. 6,058,461) and Chin (US Patent No. 6,247,102).

For claim 3, the combined teachings of Kolchinsky and Lewchuk disclose the invention as per the rejection of claims 1-2 above. Kolchinsky and Lewchuk do not, however, expressly disclose the bank assignment priority is established according to a

loop count that indicates the number of times the arithmetic instruction is executed repeatedly.

Chin, however, discloses a read/write data controller with a cacheline read/write counter, in which when the last cacheline is read from memory, the controller loads the cacheline counter with the next count and the next set of memory reads or writes begins (col. 14, lines 23-48 and col. 14, lines 54-67 and col. 15, lines 1-15).

Kolchinsky, Lewchuk and Chin are analogous art in that they are of the same field of endeavor, that is, a system and method for memory control, especially for the handling of a plurality of memory operations. It would have been obvious to a person of ordinary skill in the art at the time of the invention to include a loop count to indicate the number of times an instruction is executed because this allows the next set of memory reads to begin and determine when sufficient read data has been returned from memory so that access to the address/data bus may be moderated accordingly (col. 14, lines 41-44) as taught by Chin.

Claim 13 is rejected using the same rationale as for the rejection of claim 3 above.

8. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolchinsky (US Patent No. 5,301,344), Lewchuk (US Patent No. 6,058,461) and Idleman (5,371,855).

For claim 4, the combined teachings of Kolchinsky and Lewchuk disclose the invention as per the rejection of claim 1 above. Kolchinsky and Lewchuk do not,

however, expressly disclose the bank assignment priority is established according to data-use frequency.

Idleman, however, discloses a data processing system and cache buffer that may be structured so that a priority system is establish with respect to its frequency of use. The most frequently used information would receive the highest priority and the least frequently used information would receive the lowest priority (col. 2, lines 64-68 and col. 3, lines 1-2).

Kolchinsky, Lewchuk and Idleman are analogous art in that they are of the same field of endeavor, that is, a system and method for memory management, especially for optimizing bus data transfers. It would have been obvious to a person of ordinary skill in the art at the time of the invention to sort bank assignment priority by data-use frequency, because this would allow for rapid access of priority information and enhance system performance (col. 2, lines 56-58), as taught by Idleman.

Claim 14 is rejected using the same rationale as for the rejection of claim 4 above.

Contact Information

9. Any inquiries concerning this action or earlier actions from the examiner should be directed to Daniel Kim, reachable at 571-272-2742, on Mon-Fri from 8:30am-5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan, is also reachable at 571-272-4210.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information from published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. All questions regarding access to the Private PAIR system should be directed to the Electronic Business Center (EBC), reachable at 866-217-9197.

DK

11-28-05

PIERRE VITAL
PRIMARY EXAMINER